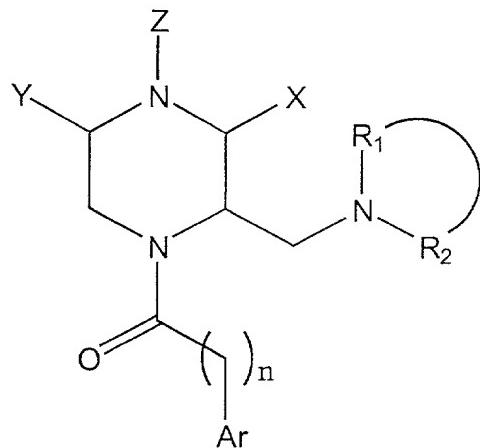


WHAT IS CLAIMED IS:

1. A pharmaceutical composition for the prevention or treatment of pruritus comprising a compound of formula I or a pharmaceutically acceptable salt thereof

5



(I)

wherein

 $n = 1-3;$

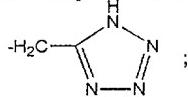
R_1 and R_2 are independently $= CH_3 ; -(CH_2)_m$, where $m = 4-8$, $-CH_2CH(OH)(CH_2)_2-$; $-CH_2CH(F)(CH_2)_2-$; $-(CH_2)_2O(CH_2)_2-$; or $-(CH_2)_2CH=CHCH_2-$;

$Ar =$ unsubstituted or mono-, or di-substituted phenyl
wherein said substituents are selected from the group
consisting of halogen, OCH_3 , SO_2CH_3 , CF_3 , amino, alkyl,
and 3,4-dichloro; benzothiophenyl; benzofuranyl; naphthyl;
diphenyl methyl; or 9-fluorene;

Z is

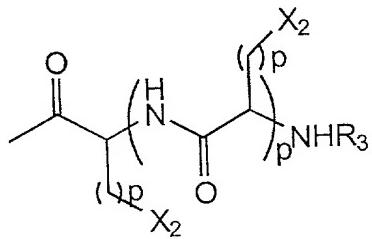
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$-P(O)(OBn)_2$; $-P(O)(OH)_2$; $-(CH_2)_pC(O)NHOH$; $-(CH_2)_pCO_2H$; $-SO_2CH_3$; $-SO_2NH_2$;
 $-CO(CH_2)_pCH(NH_2)(CO_2H)$; $-COCH(NH_2)(CH_2)_pCO_2H$; $-CO_2CH_3$; $-CONH_2$;
 $-(CH_2)_pO(CH_2)_pCO_2H$; $-(CH_2)_pO(CH_2)_pCONHOH$; $-(CH_2)_pNHSO_2CH_3$; -
 $(CH_2)_pNHC(S)NHCH(CO_2H)(CH_2)_pCO_2H$; $-(CH_2)_pSO_3H$; or



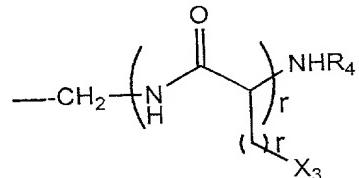
15

or Z is



wherein

X and Y are independently
 $-\text{CH}_2\text{NHSO}_2\text{CH}_3$, $-\text{CH}_2\text{NHP(O)(OBn)}_2$, $-\text{CH}_2\text{NHC(S)NHCH(CO}_2\text{H})(\text{CH}_2)_q\text{CO}_2\text{H}$, or
 $-\text{CH}_2\text{OP(O)(OH)}_2$, $-(\text{CH}_2)_q\text{O}(\text{CH}_2)_q\text{CO}_2\text{H}$, $-(\text{CH}_2)_q\text{O}(\text{CH}_2)_q\text{SO}_3\text{H}$,
 $-(\text{CH}_2)_q\text{O}(\text{CH}_2)_q\text{CHNHOH}$,



wherein

q = 1-20

r = 1-20

$R_4 = -H$ or $-Ac$

$X_3 = -CO_2H; -NHSO_2CH_3; -NHP(O)(OBn)_2;$
 $-NHP(O)(OH)_2; -OP(O)(OBn)_2; \text{ or}$
 $-OP(O)(OH)_2$

in a pharmaceutically acceptable carrier.

2. The pharmaceutical composition according to claim 1 wherein said compound is
selected from the group consisting of: {4-[1-(3,4-Dichlorophenyl)acetyl-2R-(1-pyrrolidinyl)-]
methyl]piperazinyl} acetic acid; [1-(3,4-Dichlorophenyl)acetyl-4-methanesulfonyl-2R-(1-
pyrrolidinyl)methyl]piperazine; [4-S-Aspartic acid- α -amido-1-(3,4-dichlorophenyl)acetyl-
2R-(1-pyrrolidinyl)methyl]piperazine; Methyl-[2R-(O-2-acetic acid)hydroxymethyl-4-(3,4-
dichlorophenyl)acetyl-3R-(1-pyrrolidinyl)methyl]-1-piperazinecarboxylate; Methyl-[2R-(O-
S-aspartic acid- α -acetyl)hydroxymethyl-4-(3,4-dichlorophenyl)acetyl-3R-(1-
pyrrolidinyl)methyl]-1-piperazinecarboxylate; Methyl-[4-(3,4-dichlorophenyl)acetyl-2R-(N-

methanesulfonamido)aminomethyl-3R-(1-pyrrolidinyl)methyl]-1-piperazinecarboxylate; Methyl-{4-[3,4-dichlorophenyl]acetyl-3R-[1-pyrrolidinyl]methyl-2R-[N-(succinic acid-2S-thioureido)]aminomethyl}-1-piperazinecarboxylate; Methyl-[2S-(O-2-acetic acid)hydroxymethyl-4-(3,4-dichlorophenyl)acetyl-5R-(1-pyrrolidinyl)methyl]-1-

5 piperazinecarboxylate; Methyl-[2S-(O-S-aspartic acid- α -acetyl)hydroxymethyl-4-(3,4-dichlorophenyl)acetyl-5R-(1-pyrrolidinyl)methyl]-1-piperazinecarboxylate; Methyl-[4-(3,4-dichlorophenyl)acetyl-2S-(N-methanesulfonamido)aminomethyl-5R-(1-pyrrolidinyl)methyl]-1-piperazinecarboxylate; Methyl-{4-[3,4-dichlorophenyl]acetyl-5R-[1-pyrrolidinyl]methyl-2S-[N-(succinic acid-2S-thioureido)]aminomethyl}-1-piperazinecarboxylate; Methyl-[2R-(O-10 2-acetic acid)hydroxymethyl-4-(3,4-dichlorophenyl)acetyl-5R-(1-pyrrolidinyl)methyl]-1-piperazinecarboxylate; Methyl-[2R-(O-S-aspartic acid- α -acetyl)hydroxymethyl-4-(3,4-dichlorophenyl)acetyl-5R-(1-pyrrolidinyl)methyl]-1-piperazinecarboxylate; Methyl-[4-(3,4-dichlorophenyl)acetyl-2R-(N-methanesulfonamido)aminomethyl-5R-(1-pyrrolidinyl)methyl]-1-piperazinecarboxylate; and Methyl-{4-[3,4-dichlorophenyl]acetyl-5R-[1-pyrrolidinyl]methyl-2R-[N-(succinic acid-2S-thioureido)]aminomethyl}-1-piperazinecarboxylate.

3. The pharmaceutical composition according to claim 1 wherein said compound is selected from the group consisting of:

20 (R)-4-(Phenylmethyl)-1-[(3,4-dichlorophenyl)acetyl]-2-[(1-pyrrolidinyl)methyl]piperazine hydrochloride;

25 (R)-1-[(3,4-Dichlorophenyl)acetyl]-2-[(1-pyrrolidinyl)methyl]piperazine hydrochloride;

(R)-4-Methanesulfonyl-1-[(3,4-dichlorophenyl)acetyl]-2-[(1-pyrrolidinyl)methyl] -piperazine hydrochloride;

30 (R)-4-t-Butyl-acetyl-1-[(3,4-dichlorophenyl)acetyl]-2-[(1-pyrrolidinyl)methyl]-piperazine;

35 (R)-4-[(3,4-Dichlorophenyl)acetyl]-3-[(1-pyrrolidinyl)methyl]-1-piperazineacetic acid dihydrochloride;

(R)-4- N-t-Boc-D-aspartic acid- β -benzyl ester-1-[(3,4-dichlorophenyl)acetyl]-2-[(1-pyrrolidinyl)methyl] -piperazine;

40 (R)-4-Aspartic acid-1-[(3,4-dichlorophenyl)acetyl]-2-[(1-pyrrolidinyl)methyl]-piperazine dihydrochloride;

(R)-4-Acetyl-1-[(3,4-dichlorophenyl)acetyl]-2-[(1-pyrrolidinyl)methyl] -piperazine hydrochloride;

(*R*)-4-(Diethoxyphosphonate)-1-[(3,4-dichlorophenyl)acetyl]-2-[(1-pyrrolidinyl)methyl]-piperazine hydrochloride;

5 (*R*)-4-Trifluoroacetyl-1-[(3,4-dichlorophenyl)acetyl]-2-[(1-pyrrolidinyl)methyl]-piperazine hydrochloride;

(*R*)-4-[(3,4-Dichlorophenyl)acetyl]-3-[(1-pyrrolidinyl)methyl] -1-piperazinecarboxamide hydrochloride;

10 (*R*)-4-[(3,4-Dichlorophenyl)acetyl]-3-[(1-pyrrolidinyl)methyl] -1-piperazinecarboxaldehyde hydrochloride;

15 (*R*)-4-[(3,4-Dichlorophenyl)acetyl]-3-[(1-pyrrolidinyl)methyl] -1-piperazine-sulfonamide hydrochloride;

(*R*)-4-(4-Methylphenylsulfonyl)-1-[(3,4-dichlorophenyl)acetyl]-2-[(1-pyrrolidinyl)methyl] -piperazine hydrochloride;

20 (*R,S*)-4-Methanesulfonyl-1-[(3,4-dichlorophenyl)acetyl]-2-[(1-pyrrolidinyl)methyl] -piperazine hydrochloride;

(*R,S*)-4-Methanesulfonyl-1-[(4-methylsulfonylphenyl)acetyl]-2-[(1-pyrrolidinyl)-methyl]piperazine hydrochloride;

25 (*R,S*)-4-Methanesulfonyl-1-[(2-nitrophenyl)acetyl]-2-[(1-pyrrolidinyl)-methyl]piperazine hydrochloride;

(*R,S*)-4-Methanesulfonyl-1-[(4-trifluoromethylphenyl)acetyl]-2-[(1-pyrrolidinyl)-methyl]piperazine hydrochloride;

30 (*R,S*)-4-Methanesulfonyl-1-[(3-indolylacetyl)]-2-[(1-pyrrolidinyl)-methyl]piperazine hydrochloride;

35 (*R,S*)-Methyl 4-[(4-methylsulfonylphenyl)acetyl]-3-[(1-pyrrolidinyl)-methyl]-1-piperazinecarboxylate hydrochloride;

(*R,S*)-Methyl 4-[(4-trifluoromethylphenyl)acetyl]-3-[(1-pyrrolidinyl)-methyl]-1-piperazinecarboxylate hydrochloride;

40 (*R,S*)-Methyl 4-[(3-indolyl)acetyl]-3-[(1-pyrrolidinyl)-methyl]-1-piperazine-carboxylate hydrochloride;

45 (*R,S*)-Methyl 4-[(2-nitrophenyl)acetyl]-3-[(1-pyrrolidinyl)-methyl]-1-piperazine-carboxylate hydrochloride;

(*R,S*)-Methyl 4-[(2-methoxyphenyl)acetyl]-3-[(1-pyrrolidinyl)-methyl]-1-piperazine-carboxylate hydrochloride;

(*R,S*)-Methyl 4-[(2-aminophenyl)acetyl]-3-[(1-pyrrolidinyl)-methyl]-1-piperazine-carboxylate dihydrochloride;

5 (*R,S*)-4-Acetyl-1-[(4-methylsulfonylphenyl)acetyl]-3-[(1-pyrrolidinyl)-methyl]-piperazine hydrochloride;

10 (*R,S*)-4-Acetyl-1-(4-trifluoromethylphenyl)acetyl]-3-[(1-pyrrolidinyl)-methyl] piperazinecarboxylate hydrochloride;

15 (*R,S*)-4-Acetyl-1-[(2-trifluoromethylphenyl)acetyl]-3-[(1-pyrrolidinyl)-methyl] piperazinecarboxylate hydrochloride;

20 (*R,S*)-4-Acetyl-1-[(3-nitrophenyl)acetyl]-3-[(1-pyrrolidinyl)-methyl]piperazine-carboxylate hydrochloride;

25 (*R,S*)-4-Acetyl-1-[(2-nitrophenyl)acetyl]-3-[(1-pyrrolidinyl)-methyl]piperazine-carboxylate hydrochloride;

30 (*R,S*)-4-Acetyl-1-[(4-nitrophenyl)acetyl]-3-[(1-pyrrolidinyl)-methyl]piperazine- carboxylate hydrochloride; and

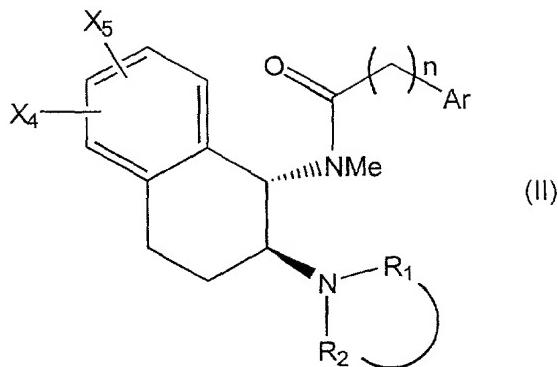
35 (*R,S*)-4-(Phenylmethyl)-1-[(4,5,-dichloro-2-nitrophenyl)acetyl]-2-[(1- pyrrolidinyl)methyl]piperazine dihydrochloride.

4. A method for the prevention or treatment of pruritus in a patient comprising administering to said patient an effective amount of a composition according to claim 1.

5. A method for the prevention or treatment of pruritus in a patient comprising 30 administering to said patient an effective amount of a composition according to claim 2.

6. A method for the prevention or treatment of pruritus in a patient comprising administering to said patient an effective amount of a composition according to claim 3.

35 7. A pharmaceutical composition for the prevention or treatment of pruritus comprising a compound of formula II or a pharmaceutically acceptable salt thereof



wherein

$n = 1-3$;

R_1 and R_2 are independently $= CH_3$; $-(CH_2)_m$, where $m =$

$4-8$; $-CH_2CH(OH)(CH_2)_2$; $-CH_2CH(F)(CH_2)_2$;

$-(CH_2)_2O(CH_2)_2$; or $-(CH_2)_2CH=CHCH_2$;

$Ar =$ unsubstituted or mono-, or di-substituted phenyl

wherein said substituents are selected from the group

consisting of halogen, OCH_3 , SO_2CH_3 , CF_3 , amino, alkyl,

and 3,4-dichloro; benzothiophenyl; benzofuranyl; naphthyl;

diphenyl methyl; or 9-fluorene;

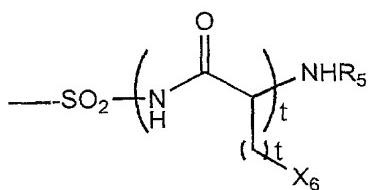
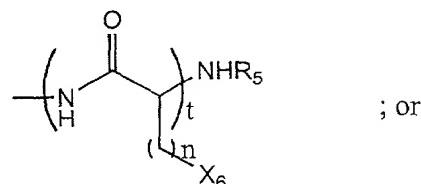
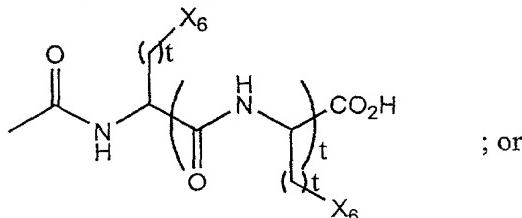
X_4 and X_5 are independently

$-OP(O)(OBn)_2$; $-OP(O)(OH)$; $-CO_2H$; $-SO_3H$; $-SO_3H$; $-O(CH_2)_nCO_2H$;

$-NHSO_2CH_3$; $-CONH(CH_2)_sCO_2H$; or $-SO_2NH(CH_2)_sCO_2H$; wherein

$s = 1-5$

or X_4 and X_5 are independently



wherein

t = 1-20

R₅ = -H or -Ac

X₆ = -CO₂H; -NHSO₂CH₃; -NHP(O)(OBn)₂;
 -NHP(O)(OH)₂; -OP(O)(OBn)₂; or
 -OP(O)(OH)₂.

in a pharmaceutically acceptable carrier.

8. The pharmaceutical composition according to claim 7 wherein said compound is selected from the group consisting of: (±)-2-(3,4-dichlorophenyl)-N-methyl-N-1-[1,2,3,4-tetrahydro-5-(O-2-acetic acid)-hydroxy-2-(1-pyrrolidinyl)naphthyl]acetamide; (±)-2-(3,4-dichlorophenyl)-N-methyl-N-1-[1,2,3,4-tetrahydro-7-(O-2-acetic acid)-hydroxy-2-(1-pyrrolidinyl)naphthyl]acetamide; (±)-2-(3,4-dichlorophenyl)-N-methyl-N-1-[1,2,3,4-tetrahydro-7-(N-methanesulfonamido)-amino-2-(1-pyrrolidinyl)naphthyl]acetamide; (±)-2-(3,4-dichlorophenyl)-N-methyl-N-1-[1,2,3,4-tetrahydro-5-(N-methanesulfonamido)-amino-2-(1-pyrrolidinyl)naphthyl]acetamide; (±)-2-(3,4-dichlorophenyl)-N-methyl-N-1-[1,2,3,4-tetrahydro-5-(N-2-acetic acid)-carboxamido-2-(1-pyrrolidinyl)naphthyl]acetamide; (±)-2-(3,4-dichlorophenyl)-N-methyl-N-1-[1,2,3,4-tetrahydro-5-(N-2-acetic acid)-sulfonamido-2-(1-pyrrolidinyl)naphthyl]acetamide; (±)-2-(3,4-dichlorophenyl)-N-methyl-N-1-[1,2,3,4-tetrahydro-7-(N-2-acetic acid)-carboxamido-2-(1-pyrrolidinyl)naphthyl]acetamide; and (±)-2-(3,4-dichlorophenyl)-N-methyl-N-1-[1,2,3,4-tetrahydro-7-(N-2-acetic acid)-sulfonamido-2-(1-pyrrolidinyl)naphthyl]acetamide.

9. The pharmaceutical composition according to claim 7 wherein said compound is selected from the group consisting of:

2-{7-[(\pm) -trans-1-(N-3,4-dichlorophenylacetamido-N-methylamino)-2-(1-pyrrolidinyl)-1,2,3,4-tetrahydronaphthoxy]} acetic acid;
 2,2-Diphenyl-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-7-methoxy-1,2,3,4-tetrahydronaphth-1-yl]acetamide;
 2,2-Diphenyl-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-7-hydroxy-1,2,3,4-tetrahydronaphth-1-yl]acetamide;
 2-(2-Nitro-4,5-dichlorophenyl)-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-7-nitro-1,2,3,4-tetrahydronaphth-1-yl]acetamide;
 2-(3,4-Dichlorophenyl)-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-7-nitro-1,2,3,4-tetrahydronaphth-1-yl]acetamide;

2-(3,4-Dichlorophenyl)-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-7-amino-1,2,3,4-tetrahydronaphth-1-yl]acetamide;

5 2-(4-Methylsulfonylphenyl)-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-7-nitro-1,2,3,4-tetrahydronaphth-1-yl]acetamide;

2-(3,4-Dichlorophenyl)-N-methyl-N-[$\{\pm\}$ -trans-2-[1-pyrrolidinyl]-7-[N,N-bis-(t-butoxycarbonylmethyl)-amino]-1,2,3,4-tetrahydronaphth-1-yl]acetamide;

10 2-(3,4-Dichlorophenyl)-N-methyl-N-[$\{\pm\}$ -trans-2-[1-pyrrolidinyl]-7-[N,N-bis-(carboxymethyl)amino]-1,2,3,4-tetrahydronaphth-1-yl]acetamide;

2-(3,4-Dichlorophenyl)-N-methyl-N-[$\{\pm\}$ -trans-2-[1-pyrrolidinyl]-7-[N,N-bis-(ethoxycarbonylmethyl)-amino]-1,2,3,4-tetrahydronaphth-1-yl]acetamide;

15 2-(3,4-Dichlorophenyl)-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-7-(N-diethylphosphoramido-amino)-1,2,3,4-tetrahydronaphth-1-yl]acetamide;

20 2-(3,4-Dichlorophenyl)-N-methyl-N-[$\{\pm\}$ -trans-2-[1-pyrrolidinyl]-7-[N-2-(diethylphosphoryl)ethyl-amino]-1,2,3,4-tetrahydronaphth-1-yl]acetamide;

25 2-(3,4-Dichlorophenyl)-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-6-methoxy-7-(N-benzyl-N-methylaminosulfonyl)-1,2,3,4-tetrahydronaphth-1-yl]acetamide;

2-(3,4-Dichlorophenyl)-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-7-(N-benzyl-N-methylaminosulfonyl)-1,2,3,4-tetrahydronaphth-1-yl]acetamide;

30 2-(2-Nitro-4,5-dichlorophenyl)-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-indan-1-yl]acetamide;

35 2-(2-Nitro-4-trifluoromethylphenyl)-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-indan-1-yl]acetamide;

2,2-Diphenyl-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-indan-1-yl]acetamide; and

40 2-(4-Methylsulfonylphenyl)-N-methyl-N-[(\pm) -trans-2-(1-pyrrolidinyl)-indan-1-yl]acetamide.

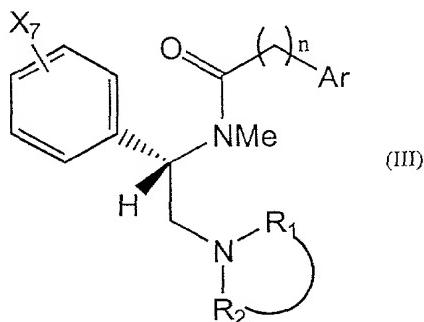
10. A method for the prevention or treatment of pruritus in a patient comprising administering to said patient an effective amount of a composition according to claim 7.

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11. A method for the prevention or treatment of pruritus in a patient comprising administering to said patient an effective amount of a composition according to claim 8.

12. A method for the prevention or treatment of pruritus in a patient comprising administering to said patient an effective amount of a composition according to claim 9.

13. A pharmaceutical composition for the prevention or treatment of pruritus comprising
5 a compound of the formula III or a pharmaceutically acceptable salt thereof



wherein

n = 1-3;

R₁ and R₂ are independently = CH₃; -(CH₂)_m, where m = 4-8; -CH₂CH(OH)(CH₂)₂; -CH₂CH(F)(CH₂)₂; -(CH₂)₂O(CH₂)₂; or -(CH₂)₂CH=CHCH₂;

Ar = unsubstituted or mono-, or di-substituted phenyl wherein said substituents are selected from the group consisting of halogen, OCH₃, SO₂CH₃, CF₃, amino, alkyl, and 3,4-dichloro; benzothiophenyl; benzofuranyl; naphthyl; diphenyl methyl; or 9-fluorene;

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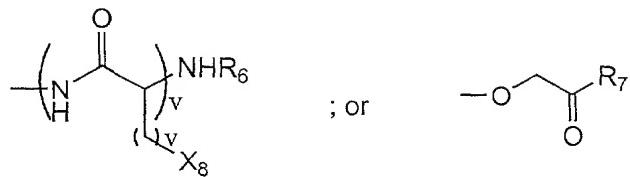
X₇ is

-NHSO₂CH₃; -NHP(O)(OBn)₂; -NHP(O)(OH)₂; -(CH₂)_uNHSO₂CH₃; -(CH₂)_uNHC(S)NHCH(CO₂H)(CH₂)_uCO₂H; -CONHOH; or -(CH₂)_uCONHOH;

wherein

u = 1-5;

or X₇ is



$R_6 = -H$ or $-Ac$;
 $X_8 = -CO_2H$; $-NSO_2CH_3$; $-NHP(O)(OBn)_2$;
 $-NHP(O)(OH)_2$; $-OP(O)(OBn)_2$; or
 $-OP(O)(OH)_2$;

$R_7 = -NH(CH_2)_vCO_2H$; $-NH(CH_2)_vCH(NH_2)(CO_2H)$;
 $-NHCH(CO_2H)(CH_2)_vNH_2$; $-NH(CH_2)_vSO_3H$;
 $-NH(CH_2)_vPO_3H_2$; $-NH(CH_2)_vNHC(NH)NH_2$; or
 $-NHCH(CO_2H)(CH_2)_vCO_2H$; and
 $v = 1-20$.

in a pharmaceutically acceptable carrier.

- 5 14. The pharmaceutical composition according to claim 13 wherein said compound is selected from the group consisting of:
 2-(3,4-dichlorophenyl)-N-methyl-N-{1-[3-(N-2-acetic acid)carboxamido]phenyl-2-(1-pyrrolidinyl)ethyl}acetamide; 2-(3,4-dichlorophenyl)-N-methyl-N-{1-[3-(N-methanesulfonamido)aminomethyl]phenyl-2-(1-pyrrolidinyl)ethyl}acetamide; 2-(3,4-dichlorophenyl)-N-methyl-N-{1-[3-(N-succinic acid-2S-thioureido)aminomethyl]phenyl-2-(1-pyrrolidinyl)ethyl}acetamide; and 2-(3,4-dichlorophenyl)-N-methyl-N-{1-[3-(N-2-acetic acid)sulfonamido]phenyl-2-(1-pyrrolidinyl)ethyl}acetamide.
- 10 15. The pharmaceutical composition according to claim 13 wherein said compound is selected from the group consisting of:
 2-(3,4-Dichlorophenyl)-N-methyl-N-{{1S}-1-[N-(S-aspartic acid- α -amide-S-aspartic acid- α -amido)-3-aminophenyl]-2-[1-pyrrolidinyl]ethyl}acetamide;
- 20 2-(3,4-Dichlorophenyl)-N-methyl-N-{{1S}-1-[N-(bis-methylsulfonamido)-3-aminophenyl]-2-[1-pyrrolidinyl]ethyl}acetamide;
 2-(2-Nitrophenyl)-N-methyl-N-[(1S)-1-(3-nitrophenyl)-2-(1-pyrrolidinyl)ethyl]acetamide;
 25 2-(2-Aminophenyl)-N-methyl-N-[(1S)-1-(3-aminophenyl)-2-(1-pyrrolidinyl)ethyl]acetamide;
 2-(N-Diethyl phosphoramidate-2-aminophenyl)-N-methyl-N-[(1S)-1-(N-diethyl phosphoramidate-3-aminophenyl)-2-(1-pyrrolidinyl)ethyl]acetamide;
 30 2-(N-Bis-sulfonamido-2-aminophenyl)-N-methyl-N-[(1S)-1-(N-bis-sulfonamido-3-aminophenyl)-2-(1-pyrrolidinyl)ethyl]acetamide;
 2-(2-Nitro-4,5-dichlorophenyl)-N-methyl-N-[(1S)-1-(3-nitrophenyl)-2-(1-pyrrolidinyl)ethyl]acetamide;

- 2-(4-Methylsulfonylphenyl)-N-methyl-N-[(1S)-1-(3-nitrophenyl)-2-(1-pyrrolidinyl)ethyl]acetamide;
- 5 2-(N-Butyloxycarbonyl-4-aminophenyl)-N-methyl-N-[(1S)-1-(3-nitrophenyl)-2-(1-pyrrolidinyl)ethyl]acetamide;
- 10 2-(4-Aminophenyl)-N-methyl-N-[(1S)-1-(3-nitrophenyl)-2-(1-pyrrolidinyl)ethyl]acetamide;
- 15 2-(N-Bis-sulfonamido-4-aminophenyl)-N-methyl-N-[(1S)-1-(3-nitrophenyl)-2-(1-pyrrolidinyl)ethyl]acetamide;
- 20 2-(2-Nitrophenyl)-N-methyl-N- {[1S]-1-phenyl-2-[1-(3S)-(3-hydroxypyrrolidinyl)]ethyl} acetamide;
- 25 2-(2-Nitro-4,5-dichlorophenyl)-N-methyl-N- {[1S]-1-phenyl-2-[1-(3S)-(3-hydroxypyrrolidinyl)]ethyl} acetamide;
- 30 2-(4-Methylsulfonylphenyl)-N-methyl-N- {[1S]-1-phenyl-2-[1-(3S)-(3-hydroxypyrrolidinyl)]ethyl} acetamide;
- 35 2-(2-Nitro-4-trifluoromethylphenyl)-N-methyl-N- {[1S]-1-phenyl-2-[1-(3S)-(3-hydroxypyrrolidinyl)]ethyl} acetamide;
- 40 2,2-Diphenyl-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- N',N'-Diphenyl-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]urea;
- 2-(2-Nitrophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(2-Nitro-4,5-dichlorophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(4-Methylsulfonylphenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(2-Methoxyphenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(3-Indolyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(α,α,α -Trifluoro-p-tolyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;

- 2-(2-Nitro- α,α,α -Trifluoro-4-tolyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 5 2-(1-[4-Chlorobenzoyl]-5-methoxy-2-methyl indole)-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(4-Nitrophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 10 2-(3-Nitrophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(2-Pyridyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 15 2-(3-Pyridyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-((+)-6-Methoxy- α -methyl-2-naphthalene)-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 20 2-(α,α,α -Trifluoro-3-tolyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(4-Pyridyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 25 2-(α,α,α -Trifluoro-2-tolyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-((S)-(+)-4-Isobutyl- α -methylphenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 30 2-(3,4,5-Trimethoxyphenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(2-Aminophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 35 2-(2-N,N-Dimethylsulfonamido-2-aminophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(N-Methylsulfonamido-2-aminophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 40 2-(2-Amino 4,5-dichlorophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(N,N-Dimethylsulfonamido-2-amino-4,5-dichlorophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 45 2-(2-Amino, α,α,α -Trifluoro-4-tolyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;
- 2-(2-N,N-Dimethylsulfonamido-2-amino- α,α,α -trifluoro-4-tolyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;

2-(N-Methylsulfonamido-2-amino- α,α,α -trifluoro-4-tolyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;

2-(2-Aminophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;

2-(4-Aminophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;

2-(N,N-Dimethylsulfonamido-2-aminophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;

2-(N,N-Dimethylsulfonamido-2-aminophenyl)-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide;

2-(2-Hydroxyphenyl)-N-methyl-N-methyl-N-[(1S)-1-phenyl-2-(1-pyrrolidinyl)ethyl]acetamide; and

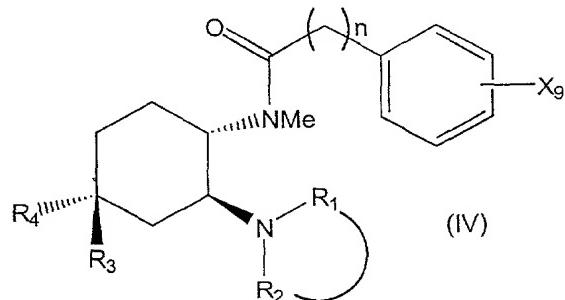
N-Methyl-N-[(1S)-1-phenyl-2-((3S)-3-hydroxypyrrolidine-1-yl)ethyl]-3,4,5-trimethoxyphenylacetamide.

16. A method for the prevention or treatment of pruritus in a patient comprising administering to said patient an effective amount of a composition according to claim 13.

17. A method for the prevention or treatment of pruritus in a patient comprising administering to said patient an effective amount of a composition according to claim 14.

18. A method for the prevention or treatment of pruritus in a patient comprising administering to said patient an effective amount of a composition according to claim 15.

30 19. A pharmaceutical composition for the prevention or treatment of pruritus comprising a compound of the formula IV or a pharmaceutically acceptable salt thereof



wherein

n = 1-3;

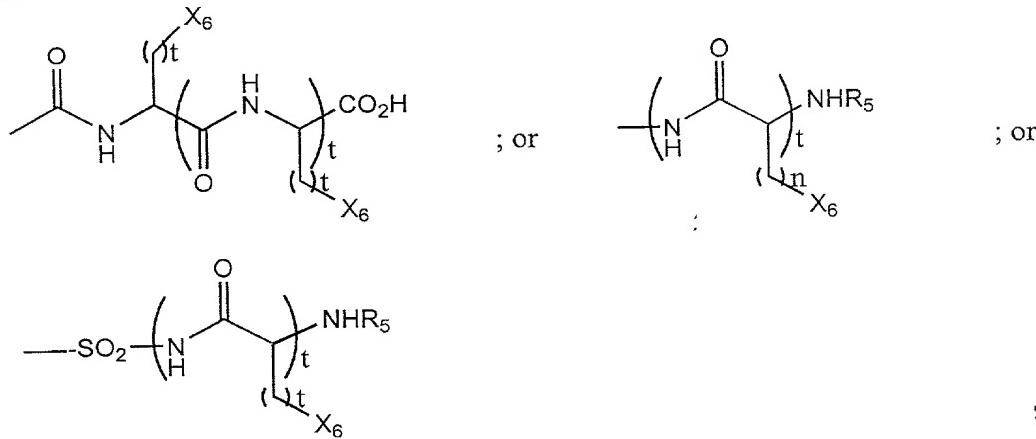
R₁ and R₂ are independently = CH₃; -(CH₂)_m, where m = 4-8; -CH₂CH(OH)(CH₂)₂-; -CH₂CH(F)(CH₂)₂-; -(CH₂)₂O(CH₂)₂-; or -(CH₂)₂CH=CHCH₂-;

R₃ and R₄ are independently H; OCH₃; alkyl; or c-O(CH₂)₂;

5 X₉ = 1-4 substituents selected from the groups consisting of

-halogen; -CF₃; -OCH₃; -SO₂NH(CH₂)_qCO₂H; -CONH(CH₂)_qCO₂H;
 -NH₂; -NHSO₂CH₃; -NHP(O)(OBn)₂; -NHP(O)(OH)₂; NH(CH₂)_qCO₂H; -SO₂CH₃;
 -OP(O)(OBn)₂; -OP(O)(OH)₂; -CO₂H; -O(CH₂)_qCO₂H; -O(CH₂)_qSO₃H,
 -O(CH₂)_qOPO₃H₂; wherein
 q = 1-20;

or X₉ is



15 wherein

t = 1-20;

R₅ = -H or -Ac;

X₆ = -CO₂H; -NHSO₂CH₃; -NHP(O)(OBn)₂;
 -NHP(O)(OH)₂; -OP(O)(OBn)₂; or
 -OP(O)(OH)₂.

in a pharmaceutically acceptable vehicle.

20. The pharmaceutical composition according to claim 19 wherein said compound is selected from the group consisting of:

(-)-(5 α ,7 α ,8 β)-N-methyl-N-[7-(1-pyrrolidinyl)-1-oxaspiro-[4,5]dec-8-yl]-3-(N-methanesulfonamido)aminophenylacetamide; (-)-(5 α ,7 α ,8 β)-N-methyl-N-[7-(1-pyrrolidinyl)-

5 1-oxaspiro-[4,5]dec-8-yl]-3-(N-2-acetic acid)sulfonamidophenylacetamide; and (-)-(5 α ,7 α ,8 β)-N-methyl-N-[7-(1-pyrrolidinyl)-1-oxaspiro-[4,5]dec-8-yl]-3-(N-2-acetic acid)carboxamidophenylacetamide.

21. The pharmaceutical composition according to claim 19 wherein said compound is
10 selected from the group consisting of:

(\pm)-*trans*-2-Nitro-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]phenylacetamide
Hydrochloride;

(\pm)-*trans*-2-Amino-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]phenylacetamide
Hydrochloride;

(\pm)-*trans*-2-Nitro-4,5-dichloro-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-phenylacetamide
Hydrochloride;

(\pm)-*trans*-2-Amino-4,5-dichloro-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-phenylacetamide
Hydrochloride;

(\pm)-*trans*-2-Methanesulfonamido-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-
phenylacetamide Hydrochloride;

N-[2-(\pm)-*trans*-N-Methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-phenylacetamido]glycine
Hydrochloride;

30 (\pm)-*trans*-4-Trifluoromethyl-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-phenylacetamide
Hydrochloride;

(\pm)-*trans*-2-Nitro-4-trifluoromethyl-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-
phenylacetamide Hydrochloride;

35 (\pm)-*trans*-2-Amino-4-trifluoromethyl-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-
phenylacetamide Hydrochloride;

(\pm)-*trans*-2-Bismethanesulfonamido-4-trifluoromethyl-N-methyl-N-[2-(1-
pyrrolidinyl)cyclohexyl]-phenylacetamide Hydrochloride;

(\pm)-*trans*-2-Methanesulfonamido-4-trifluoromethyl-N-methyl-N-[2-(1-
pyrrolidinyl)cyclohexyl]-phenylacetamide Hydrochloride;

N-[2-(\pm)-*trans*-4-Trifluoromethyl-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-phenylacetamido]glycine Hydrochloride;

5 (\pm)-*trans*-3-Trifluoromethyl-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-phenylacetamide
Hydrochloride;

(\pm)-*trans*-5-Nitro-3-trifluoromethyl-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-phenylacetamide Hydrochloride;

10 (\pm)-*trans*-2-Nitro-3-trifluoromethyl-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-phenylacetamide Hydrochloride;

(\pm)-*trans*-2-Trifluoromethyl-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-phenylacetamide Hydrochloride;

15 (\pm)-*trans*-4-Nitro-2-trifluoromethyl-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-phenylacetamide Hydrochloride;

20 (\pm)-*trans*-4-Amino-2-trifluoromethyl-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]-phenylacetamide Hydrochloride;

(\pm)-*trans*-N-Methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]2,2-diphenylacetamide Hydrochloride;
and

25 (\pm)-*trans*-4-Methylsulfonyl-N-methyl-N-[2-(1-pyrrolidinyl)cyclohexyl]phenylacetamide Hydrochloride.

22. A method for the prevention or treatment of pruritus in a patient comprising administering to said patient an effective amount of a composition according to claim 19.

30 23. A method for the prevention or treatment of pruritus in a patient comprising administering to said patient an effective amount of a composition according to claim 20.

35 24. A method for the prevention or treatment of pruritus in a patient comprising administering to said patient an effective amount of a composition according to claim 21.